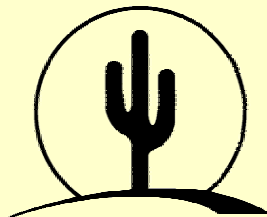# Southwest Signal Engineering Company

CREATING DATABASE SYSTEMS
TO
MANAGE SOFTWARE CONFIGURATION PROGRAMS

Presented to the

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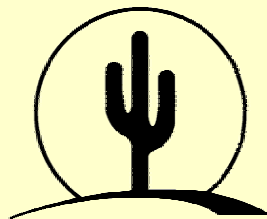(904) 443-0083 FAX: (904) 443-0089
WWW.SWSIGNAL.COM

CREATING DATABASE SYSTEMS TO MANAGE SOFTWARE CONFIGURATION PROGRAMS

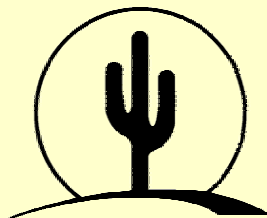As the use of software programmable equipment began to increase, CSX became very concerned with the management and control of these site-specific programs. This presentation will focus on how Southwest Signal Engineering addressed the problem with CSX Transportation and developed a database solution that is critical to operations today.
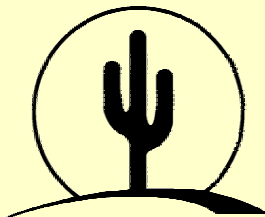
- **SITUATION**

  - First vital logic controllers installed in 1986

  - Multiple Vendors used to create various programs

  - Individual vendors maintained the copy of program they created

  - Dramatic increase in use and number of locations by 1996

- **PROBLEM**

  ♦ No system in place to account all programs

  ♦ No system in place to verify programs designed matched program in use in the field

  ♦ No way to positively identify where original program was maintained

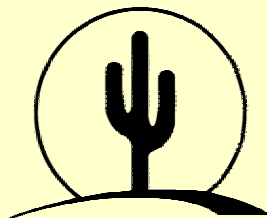 ♦ No way to maintain version control and distribution

SOLUTION

Southwest Signal presented a solution that would :

- archive the programs and manage the control procedures
- ensure the current software installed in field-tested equipment was
- readily accessible to authorized personnel, and its
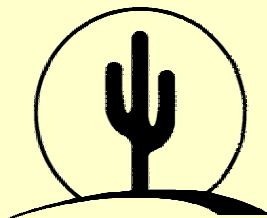- location would be continually known.

In 1998, CSX Transportation awarded Southwest Signal with a contract to capture, catalog, and archive all existing programs and develop a process for managing their dissemination and tracking, as well as, capture new programs as they were installed.

The key to Southwest Signal's solution was the use of databases.

- **PROCESS**
  - ♦ Create a list of all known software locations
  - ♦ Obtain physical copy of most current software program
  - ♦ Verify programs against the actual program in the field
  - ♦ Establish a centralized collection point for all information related to software management and development
  - ♦ Create database using Microsoft Access
  - ♦ Distribute to the project sponsor at CSX Transportation and vendors for testing and review.
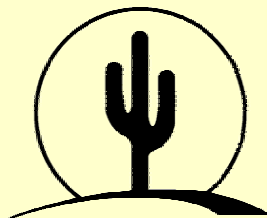
CURRENT STATUS

- Electric Code 4/5   2000 locations
- VHLC   510
- HLC   50
- GE Series 6   200
- Defect Detectors   810
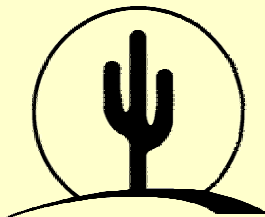- VPI, PLC, Microlox, Microtrax, Genisys, etc.

- **TRANSITION TO A WEB-BASED OPERATION**

  ♦ Migrate data from MS Access to MS SQL Web-based database

  ♦ Linking of the program with its corresponding database record

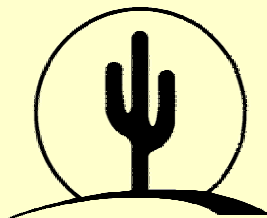 ♦ The SQL code was then formatted for display by an internet browser using Cold Fusion software

BENEFITS

♦ Single source for co-location of database and all software programs available 24 hours a day

♦ Availability of database and programs to anyone with internet capability

♦ Authorized end user can locate the program, access the program and verify its vital data

♦ Availability of programs within minutes vice days

♦ Ability to review related data without sending people to the field

♦ Ability to maintain version control of programs and enforce secure limited distribution

TIME AND COST

- Set up database $10,000 - $12,000
- Enter data $10,000 - $12,000
- Data collection
    - 4 Man hours per location
    - $40.00 per Man Hour
- Set up Web-Site $10,000 - $15,000
- Maintain database   20 hours per month

Southwest Signal Engineering

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